Komposisi
JURNAL PENDIDIKAN BAHASA SASTRA DAN SENI

Komposisi: Jurnal Pendidikan Bahasa, Sastra, dan Seni

Volume XVII
Nomor 1
Maret 2016
Hal. 1-18

available at http://ejournal.unp.ac.id/index.php/komposisi
ISSN 1411-3732

THE IMPLEMENTATION OF SCIENTIFIC APPROACH IN TEACHING ENGLISH AT THE TENTH GRADE OF SENIOR HIGH SCHOOL 7 PADANG

IMPLEMENTASI PENDEKATAN SAINTIFIK DALAM PEMBELAJARAN BAHASA INGGRIS PADA KELAS 10 SMA NEGERI 7 PADANG

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Abstract

This article aims to investigate the extent to which the implementation of Scientific Approach by English teacher who taught in tenth grade at SMAN 7 Padang. Researcher tries to see the implementation of Scientific Approach in teaching and learning process, assessment and problems faced by the English teachers in teaching and learning process using scientific approach in 2013 Curriculum. Kind of the research is descriptive method. Data of the research were taken from observation and interview. Direct observation were done to see the activities and assessments conducted by English teachers in the classroom. Then, the researchers interviewed the English teacher to know the extent to which the implementation of Scientific approach in teaching and learning processes related to observing, questioning, experimenting, associating, and communicating. Then, the problems in the teaching and learning process were identified. The results showed that 69% of the steps in the scientific approach implemented by the English teacher. However the English teachers only used 62% of assessments based on the 2013 curriculum. Atferwards, there were problems faced by English teachers in the learning process in each steps in the scientific approach in the aspect of 2013 Curriculum.

Key Words: Implementation, Scientific Approach, Teaching English, 2013 Curriculum

Abstrak

Artikel bertujuan untuk menginvestigasi sejauh mana penerapan Pendekatan Saintifik oleh guru Bahasa Inggris yang mengajar di kelas X SMAN 7 Padang. Peneliti mencoba untuk menemukan penerapan Pendekatan Saintifik dalam proses belajar dan mengajar, penilaian dan permasalahan dalam proses belajar dan mengajar dengan menggunakan Pendekatan Saintifik pada Kurikulum 2013. Penelitian ini menggunakan metode deskriptif. Data diperoleh melalui observasi dan wawancara. Observasi langsung untuk melihat kegiatan dan penilaian yang dilakukan oleh guru Bahasa Inggris di dalam kelas. Kemudian, peneliti mengadakan wawancara dengan guru Bahasa Inggris untuk mengetahui sejauh mana penerapan Pendekatan Saintifik dalam proses belajar dan mengajar yang berkaitan dengan observing, questioning, experimenting, associating, and communicating. Kemudian, Permasalahan dalam proses belajar dan mengajar tersebut kemudian diidentifikasi. Hasil penelitian menunjukan bahwa 69% tahap-tahap pendekatan saintifik diterapkan oleh guru Bahasa Inggris. Akan tetapi dalam penilaian guru Bahasa Inggris hanya menggunakan 62% jenis penilaian berdasarkan Kurikulum 2013. Lalu, dalam proses belajar mengajar terdapat permasalahan yang dihadapi guru Bahasa Inggris di setiap langkah – langkah pada pendekatan saintifik dalam aspek Kurikulum 2013.

Kata Kunci: Implementation, Scientific Approach, Teaching English, 2013 Curriculum

Introduction

The 2013 curriculum for education system in Indonesia has been gradually implemented since the beginning of 2013/2014 academic year. As an effort to improve the national education quality, the new curriculum placed science and civic education integrated with religious and moral education. The government develops 2013 Curriculum for some reasons, (1) the need to increase the competency, (2) to improve communication skills, (3) to enhance the ability to think critically, and (4) to consider the moral aspects of the students (Kemdikbud, 2013).

The 2013 curriculum provides a new approach in teaching process as a demand in 21st century. It provides scientific approach to develop the students' skill, knowledge and attitude. Moreover, the scientific approach in 2013 curriculum focuses on the productive, creative, innovative and affective students through integrated skills, attitudes, and knowledge. This goals can be achieved by designing the effective and meaningful instruction to the students. Hence, the

teacher was supposed to use scientific approach in teaching and learning process.

In fact, related to the issue of the global era, there seemed to be some problems in implementing 2013 Curriculum. As the survey reported by Education expert of Universitas Negeri Sebelas Maret (UNS), Furqon Hidayatullah (Metrotvnews.com, October 2014), indicates that there were three issues that led to the implementation of the 2013 Curriculum. Those issues are: (1) The changes in the learning process from teacher centered to student centered; (2) teachers are more stressed cognitive aspects. The matter of fact, (3) The teacher should also have to provide the same portion of the affective and psychomotor aspects. 2013 Curriculum requires teachers to be more creative and innovative.

Based on the phenomena above, it was needed the potential and creativity teacher to create the successful of curriculum implementation in teaching and learning process using scientific approach. Whereas in 2013 Curriculum, the teacher was the main figure in curriculum implementation. In line with it, Mulyasa (2013: 41) stated that the main factor to decide the successful of curriculum implementation is teacher's creativity. Good quality of teacher depended on how well she could teach in the classroom. The teacher should have competence and higher responsibility to do the planned program. In this case, the teacher was demanded to create the students to be productive, creative, inovatif in realizating the aim of national education decided by several key of figure. The figure were related to the leadership of headmaster, teacher creativity, students activity, socialization, facility, sources of learning, condusive academic area, and participation of school committee. The teacher were supposed to comprehend the substance of 2013 Curriculum in term of scientific approach and its implementation in teaching and learning process eventhough there were effort by the government to increase the quality of teacher through the certification program.

In preliminary research in observation at Senior High School 7 Padang, the researcher found that, there were four certified English teachers at Senior High School 7 Padang. Meanwhile, they didn't give significant contribution toward the teaching and learning process. This phenomena were proved when the teacher applied the way of teaching and learning process in the classroom. The teacher still used conventional way, for instance: spoon feeding, explaining, copying, giving exercise, and asking questions. These activites were monotonous and not interesting which have been all conducted in the classroom. These methods affected the students' desire to learn English. As a result, it influenced

the students' achievement of English subject and students' mark in mid and semester examination.

Meanwhile, the way of assessment which was not clear yet. The English teachers didn't understand how to design assessment in scientific approach based on standard instruction of 2013 Curriculum (Zaim, 2013). Hence, the teacher tended to adopt the form of assessment from the other school. So, the teacher got difficulties to develop the ideas in adjusting assessment with 2013 Curriculum. Based on the observation, it proved that the teacher was still difficult to implement the 2013 Curriculum especially using scientific approach in teaching English.

Moreover, in line with it, based on informal interview at Senior High School 7 Padang, the researcher found several problems of English teachers in implementing 2013 Curriculum. Even though there were some certified teachers, they were still confused how to apply the concept of scientific approach in teaching English. One of the reasons why this happens was because the English teachers were not given sufficient and regular training to apply the concept of the approach used in teaching English. In 2013 Curriculum, the teachers were demanded to implement the five steps in whilst-activity such as observing, questioning, experimenting or explorating, associating, and communicating in the teaching and learning process. The phenomenon that teachers were still difficult to attract the students to be creative, innovative, expressive and interactive in teaching and learning English. Besides that, the teachers were rarely to invite the students to work together during the teaching and learning process. The teachers usually focused on individual learning rather than collaborative learning.

On the other hand, most of the teachers had difficulties on doing assessment. In 2013 Curriculum, teachers should provide a qualitative assessment based on the students' attitude and activity such as being active in asking question in teaching-learning prosess in the classroom. The teachers needed to complete their comprehension on each the students' assessment on their attitudes, knowledge and skills competence as well. The teachers were not only to assess the students in numeric quantitatively by using score but also they have to describe it more in qualitatively. Meanwhile, those assessments should be conducted in every meeting for each student. Finally, the teachers were demanded to give any feedback for each students about the material that they have learned.

Dealing with those phenomena, there were still any cases which affected the implementation of scientific approach in teaching English in 2013 Curriculum

at Senior High School 7 Padang. Those cases should be researched in order the implemenatation of scientific approach could be run well. Based on the cases, this article presents the implementation of scientific approach in teaching English for tenth grade in 2013 Curriculum at Senior High School 7 Padang 2014-2015 Academic Year.

Based on the explanation above, Kemdikbud (2013) supports using scientific approach in the 2013 Curriculum. There are three points that become the focus in teaching and learning process with *Scientific Approach*, attitudes (affective), skills (psychomotor) and knowledge (cognitive). Attitudes refer "students know why", skills refer to "students know how", and knowledge refers to "what students know". These three points are expected to make students affective, creative innovative, and productive. In other words, with these three points, students have soft skills and hard skills to live properly.

Kemdikbud (2013) states that the teaching and learning process uses the scientific approach at whilst teaching part. As we know, there are three parts of teaching process pre teaching (follow up), main teaching (whilst), and post teaching. In scientific approach, it consists of learning phases constructed from observing, questioning, collecting information/ experimenting, associating, and communicating (Kementrian Pendidikan dan Kebudayaan, 2013d). In this case, the steps of scientific approach belong to whilst part. They are, (1) *Observing*. based on the Syllabus of 2013 Curriculum, the teacher can do several observing activities. The teachers ask the students to observe pictures, video or power point. Here, students and teachers are provided with objects, real objects, or phenomena. In addition, Hosnan (2014: 41) also states that the teacher facilitates students to make observations, training them to pay attention (see, read, listen) to the main aspects of an object. (2) *Questioning*. Kemdikbud no. 81a the year of 2013, the teachers can do some activities to guide questioning step such as give the students a chance to ask about observation's object and lead the students to be able to give question dealing with it. (3) Experimenting. To get the real or authentic learning, learners have to do experiments. In Hosnan (2014: 58) states experimenting is as a method which is based on scientific method to solve problems in detail in order to make student get further information about the material given by the teacher. The students are expected to find other sources and get some information from it. They can get it through reading, or interview some informants. (4) *Associating.* is to describe teachers and students' active participation in the classroom. Students must be more active to give more opportunities in learning. Kemdikbud No. 81a year 2013 notes associating as learning activities to process the information collected from the observation's

result. In the context of learning, associating focused on students' learning activities.; and (5) *Communicating*. is also called collaborative learning. Kemdikbud No. 81a year 2013, communicating is activities to convey the result and conclusion of observation which based on analysis in the form of written, spoken or others. Besides, Hosnan (2014: 76) states that in the communicating step, the students will convey their conclusion about the material given to be presented to audience. It means that the students can share their thought in front of the class.

Furthermore, based on Kemdikbud No. 65 year 2013, the learning process in the 2013 Curriculum can be assessed by using authentic assessment in order to assess students' preparation, process and achievement. The authentic assessment is activities to assess students which concern to the real situation during the learning process or the students' achievement through various assessments (Kunandar, 2013: 35). That assessment can be the guidance to fix the learning process in accordance with the standard of education assessment. In addition, according to Kemdikbud No. 66 year 2013, there are some assessments can be applied by the teachers in the teaching and learning process. The forms of assessment are *written or oral test, observation, self-assessment, attitude measurement, and assessment of a task, project, and portfolios.* In 2013 Curriculum, those assessment are used to measure the competence; attitude, knowledge and, skill. First, *observation, self-assessment, peer-evaluation and journal* are used to assess the attitude. Second, written or oral test and task assignment such as *homework, individual or group project* are used to assess the knowledge. Third, the skill assessment can be assessed through *performance test, project and portfolio*.

Dealing with the theorists' statements above, the researcher can take the conclusion that the scientific approach is the approach that provided students collecting information by doing observation, asking question, doing experiment, discussing the information, serving the conclusion (Kementrian Pendidikan dan Kebudayaan, 2013d) combined with Hosnan (2014: 41). Moreover, Kemdikbud No. 66 year 2013 propose the asssessment used is authentic assessment. The forms of assessment are *written or oral test, observation, self-assessment, attitude measurement, and assessment of a task, project, and portfolios.* This approach is claimed to be more effective in increasing students' learning outcomes than the traditional one. Therefore, *Scientific Approach* in 2013 Curriculum must be applicable in all subjects including English.

Research Method

The type of this research was a descriptive research, to gain information about certain phenomena in order to describe existed condition in the field. In this case, this research was more detailed of the description of the implementing scientific approach in teaching English at Senior High School 7 Padang. Then, researcher examined the problems faced by teachers. Therefore, this research contained deep and rich description and it was concerned more on the process than the outcome or product.

The informants of this research were the teachers at Senior High School 7 Padang. There were three teachers who handle the tenth grade, and each teacher teaches three classes. There were three classes for tenth grade with the average number of students are 32 students in each class. They were X MIA 1, X MIA 2, X MIA 3. Moreover, the teachers have taken a part of the implementation of training and socialization of 2013 Curriculum for teaching English.

The data were taken from the direct observation to the scientific approach used in the classroom and interview to the teachers. In observation, the data were taken from the direct observation to the classroom. Then, the researcher prepared two kind of the observation sheet contained the indicators of teaching and learning process as well as assessment. Furthermore, the researcher observed the teaching and learning process in the classroom. After that, the researcher started to fill observation sheet by giving checklist for each sub indicator and describe it. The observation was conducted during four meetings for each teacher. The observation was to find out whether the indicators of teaching and learning process and assessment which are implemented by the English teachers in the classroom. Furthermore, the researcher committed the interview to the English teachers who teach at MIA 1, MIA 2 and MIA 3. The researcher interviewed the teachers one by one relating to the guideline that had already been set up based on the indicators of teaching and learning process. The researcher also recorded by using recorder while interviewing.

The researcher analyzed four observation checklists from each teacher. It means that the researcher analyzed twelve observation checklists for three teachers. Then the researcher put in a table. First, the data taken from observation would be qualified by using Sugiyono (2007) to see the implementation of scientific approach in teaching and learning process and assessment of three teachers (A,B and C). The scale of percentage was 1. (0% – 20%); 2. (21% – 40%); 3. (41% – 60%); 4. (61% – 80%); 5. (81% – 100%). The

description of each step would show the percentage of activities conducted by the teachers. After getting the score of every step based on observation sheet of implementation in teaching and learning process and assessment, the researcher calculated the score of all steps to get the percentage of implementation in teaching and learning process and assessment. Meanwhile, the data taken from interview, the researcher would make the transcription, analyzed it qualitatively.

Findings And Discussion

Findings

From the data analysis, it was found that there were 3 teachers who applied the scientific approach. They were teacher A, B and C. Each of them conducted it for 4 meetings. There were four topics taught by the teachers, they were Descriptive Text in the 1st meeting, Narrative Text in the 2nd meeting, Explanation Text in the 3rd meeting and Functional Text in the 4th meeting. The data was described related to the teaching and learning process, assessment and the problems faced in teaching and learning process in scientific approach at Senior High School 7 Padang. There were five sub-indicators namely observing, questioning, experimenting, associating, and communicating.

To show the activities conducted in each step by the teacher, it would be appeared by number of the activities which were conducted by teacher per meeting. Based on the findings of the data gathered that the *observing and questioning* were not still conducted optimally yet by the teachers. In this case, the teacher was still confused to apply these steps for the students. The result showed the *observing* appeared in the low score among the other steps with the percentage was 58% of activities done by the teachers. Meanwhile, *in Questioning*, percentage of activities done by the teachers was 60% of activities. After that, in *experimenting and associating* step, the teachers were able enough to apply these steps well. These steps appeared in the middle average between other steps. The result on the table above showed that *experimenting* was in the third high percentage of activities done by the teachers was 65% of activities. Furthermore, *in Associating*, percentage of activities done by the teachers was 69% of activities. The last step, *Communicating* got the highest score in implementation of scientific approach that percentage of activities done by the teachers was 93% of activities. The teachers almost covered all activities in this step. In short, the implementation of *scientific approach* in teaching English having the percentage was 69% of activities implemented by the teachers for the tenth grade students at SMUN 7 Padang. The implementation of scientific

approach in teaching English has achieved the objective of scientific approach in 2013 Curriculum. It can be seen based on the criteria of scientific approach implemented as suggested by Kemdikbud (2013).

There were some assessments used by the teachers to assess the students during the teaching and learning process. They were observation, self-assessment, peer-evaluation, performance test, project, portfolio, written test, oral test, individual project and group project. The use of these assessments applied based on the activity conducted in the classroom. The kind of assessment can be used for the function of assessment itself whether it was oral or written. Teachers always used one kind of assessments in every meeting, the data appeared the percentage was *92%* of teachers used assessments *performance test* to know the students competence directly and the teacher could assess the students at the time. The second high percentage was *observation and oral test*. The percentage was *75%* of the teachers tended to use observation, the teachers observed students' attention, response to instructional materials, or interaction with other students. Using oral test, teacher asked questions to the students related to the students' comprehension about material given at the time or the teacher recall the topic learned last time.

Assessment through written test and task assignment placed on the third higher score of teacher's tendency to use these assessments. The percentage was *67%* of teachers used *written test and task assignment* because this assessment is easily to create by the teachers. Then, the percentage was *58%* of the teachers also care about themselves by evaluating the teacher through the students and collected the students' work to show progress over time by using *portfolio assessment*. Furthermore, the percentage was *50%* of the teachers used *peer evaluation* by transcribing the students' attitude qualitatively and *project assessments* by asking students complete project or work, working individually or in pairs. This activity is rarely to apply by the teachers because it needs wording explanation. The last assessment followed the two assessments at the bottom position, the percentage was 42% of the teachers used *self – assessment* to evaluate the students in unknown time and *Journal assessment* to evaluate the teacher by the students. The teachers almost used all kind of assessment in a few meetings but not all assessment was easily to use by the teachers and need much time to describe it into the qualitative assessment. In conclusion, those are the tendencies of each teacher for ten kinds of assessment used in the classroom. The percentage was 62% of teachers using assessment based on scientific approach. The implementation of scientific approach in assessment has been achieved the objective of scientific approach in 2013 Curriculum.

Furthermore, problems faced in teaching and learning process using scientific approach found by the interview. The interviews items concerned with the activities were in the observation by using interview guideline. It was done to get clarification of the findings and experiences from the English teachers in applying scientific approach in teaching English. Researcher represented English teacher in MIA 3 as teacher A, English teacher in MIA 2 as teacher B, and English teacher in MIA 1 as teacher C.

Based on interview was done with the three teachers, it could be known the teachers were still have a problem in conducting observing, questioning, experimenting, associating, and communicating step. The teachers have conducted five steps of scientific approach 2013 Curriculum even though they couldn't apply the steps in every meeting, but generally they had applied this approach was good enough. The teacher applied this step based their own way in which it still concerned with the standard of 2013 Curriculum.

Discussion

The findings showed that almost all of the teachers had implemented the steps in each meeting but some of them did not apply several activites because of not knowing how to conduct those activities. The percentage in each indicator could prove the activities done by the teachers.

The beginning with the first step of scientific approach called as *observing*. Dealing with the Syllabus of 2013 Curriculum, the observing acitivties takes some activities such as the teachers ask the students to observe pictures, video or power point. In this case, the teachers are supposed to train the students to be serious, patient, and careful; and hoped to leads them to find and distinguish general and specific information; and also might lead the students to be able to think analytically, critically, deductively and comprehensively. The finding of the research proved that percentage of activities done by the teacher in observing step was 58% of the activities in which the teachers have implemented the observing in the teaching and learning process. That percentage showed that there was teacher have apply the appropriate material to be observed by the students based on the up to date condition. Whereas, any several teacher didn't know how to conduct the activities in observing so that she skipped the activities in observing. As a result, they couldn't complete the all the activities in observing step during the teaching and learning process.

The further step was *questioning*. As explained by Kemdikbud no. 81a the year of 2013, the teachers can do some activities to guide questioning step such as give the students a chance to ask about observation's object and lead the

students to be able to give question dealing with it. By the teacher's guidance, the students will be able to give some questions about the material given. The students' questions can be about their misunderstanding about material or their curiosity to get additional information. In this step, the teachers have to train students to be creative and able to give critical questions. If the teachers are being able to attract the students to make questions, the effectiveness of learning purpose can be achieved. The students' questions will carry out them to find the true concept of material given in order the students are not far away from the context. As a result, the students will be able to comprehend the material very well and they are ready to face the test from the teacher later on. The finding of the research showed that percentage was 60% of activities in questioning have been conducted by the teacher during the teaching and learning process. The result indicated that there was an interaction between teacher and students because the students were not anxiety yet to explore their opinion by giving questions based on their own perception to the material. Hence, by the students could be able to connect the questions with the material given.

The next step was *experimenting*. The activities are supported by the Hosnan (2014), the activities that should be achieved in experimenting step are grouping students into several groups; asking learners to discuss with each group; leading the students to to record the things by finding information, giving his opinion regard to the object observed in group; supervising the learning process by ensuring that all learners are actively involved in the discussion on each group; directing the group that needs help so that students can focus/more focused in describing the characters and events on each object. Hosnan (2014:58) states that experimenting is as a method which is based on scientific method to find the necessary data, decide the sources of data (objects, documents, books, experiments), and collect the data in order to make student get further information about the material given by the teacher. On the other word, experimenting hopes the students to find the sources and gets some information. Then the students discuss the information which contains problems by discuss it with group. They can get it through reading, or interview some informants. The students are also expected to observe their environment and link the information with their learning material. Furthermore, in experimenting, the students will be trained to be careful, honest, respectful, and appreciate other's opinion and be able to communicate with other and get further information.

If we take a look from finding of the research, it was found that the percentage of activities done by the teacher in experimenting was 65% of the activities in the experimenting in which the teachers have implemented this step during teaching and learning process. It reinforced that the material given by the teacher have guided the students to be a scientist by exploring their ideas, investigating to advance the understanding of a phenomenon, and help the students become more engaged and interested in the material they are learning. Henceforward, the following step was *associating.* The teachers were demanded to lead the students to comprehend the material in term of feature, function and structure deeply. The students could find other sources to relate them with it. As noted by Kemdikbud No. 81a year 2013, associating is as learning activities to process the information collected from the observation's result. In line with it, (Hosnan, 2014: 67) supported that associating is a process to analyze the data in form of category, determine the relationship of data/ category, and sum up the result of data analysis. It means that the students have to think logically and empirically based on the empirical data. It can be conducted by finding information from other sources which was relevant with the previous information discussed.

The activities need the students' comprehension deeply about the concept contained in the information before coming to information; as a result, the students can get conclusion about the knowledge contained in information. Associating is thinking process that must be logic and systematic based on empirics facts, it can be observed for getting the conclusion of knowledge. The applications that can be done for increasing the students' associating ability are added by Hosnan (2014) in following ways: asking the students to discuss and associate the information with each group; asking the students to be able to explain the characters and activities undertaken with respect to each image in detail. In this case the students did not only work individually but also dicuss the material in group. During the discussion the students would be able to explain the characters of material. So, the students comprehended the feature, function and structure of the material. The finding of the research proved that the percentage of activities applied by the teacher was 69% of the activities in the associating successfully applied by the teacher. The percentage showed that the teachers have been successful to present the material based on the empirical data, so that the students are easily to comprehend the material correlated with the direct even in daily life eventhough there was still the teacher who didn't applied the activities completely.

The last was *communicating.* The step began with the The teacher motivates the students perform their work in front of the class; asks each group to listen well and provide additional input with regard to the work; clarifies the results of the students' work based on the material given; provides feedback on students' performance; asks the students to make a conclusion after group discussion ended; provides tasks and opportunities for students to demonstrate attitudes, skills, and understanding of the substance of learning. It is also emphasized by Kemdikbud No. 81a year 2013, communicating is activities to convey the result and conclusion of observation which based on analysis in the form of written, spoken or others. It is correlated with Hosnan (2014: 76), in communicating step, the students were expected to be able to convey their conclusion about the material given to be presented to audience. This step demands the students to be able to present their work in front of the classroom. The students are hoped to be able to express their ideas in order to share with other friends or group.

The activity in communicating can be applied in written or oral. This activity can be conducted in group so that it can help the students to get input from the other group. The other students will clarify the presenter if he/ she is out of context of information that will be discussed. The activity also need the teacher's feedback such kind of clarification about what the students deliver in front of the classroom. In this case, the students are not only to show their work but also demonstrate their attitude, skill and understanding their understanding of the material given. The result of the research proved that percentage of activities conducted by the teacher was 93% of the activities in the communicating have been conducted by the entire teacher. The percentage showed that almost all of the teachers have applied all of steps; as a result the teachers are successful enough to communicate with the students by asking them to speak up in front of the classroom.

In short, it could be concluded that all of the steps in scientific approach namely observing, questioning, experimenting, associating, and communicating have been conducted in each step by the teachers with percentage was 69 % of all activities. In other word, the percentage proved that the teachers have achieved the goal of Kemdikbud 2013 as a demand in the implementation of scientific approach in 2013 Curriculum.

Assessment is one kind of students' evaluation to see the students' learning objective about the material during the process of learning. It is clearly stated that Kemdikbud No. 66 year 2013, Education Assessment Standards are criteria concerning the mechanism, procedures, and assessment instruments

learners' learning outcomes. The teachers need to know the students' learning situation in order to make sure whether the students understand or not with the lesson. The government regulation followed by Kunandar (2013: 35), assessment is a process to collect information about the students' development during learning process.

Meanwhile, in 2013 Curriculum, the teachers are demanded to apply the authentic assessments for students' learning objective. This assessment has been valid officially based on Kemdikbud No. 65 year 2013, the learning process in the 2103 Curriculum can be assessed by using authentic assessment in order to assess students' preparation, process and achievement. In addition, according to Kemdikbud No. 66 year 2013, there are some assessments can be applied by the teachers in the teaching and learning process. The forms of assessment are *written or oral test, observation, self-assessment, attitude measurement, and assessment of a task, project, and portfolios.*

The teachers have applied the three aspect of assessment during the teaching and learning process. First, *observation, self-assessment, peer-evaluation and journal* are used to assess the students' attitude**.** From the observation assessment sheet, the teacher have assessed some of characters such as religious, honest, discipline, responsible, care, responsive, and pro active. Then, for the self - assessment and peer – evaluation sheet, the teachers tend to assess whether the students always, often, sometimes or never study hard, learn with curiosity, collect the task on time, be active in group. After that, in journal sheet, how the teachers evaluate the students by wording the positive and negative attitude qualitatively.

In 2013 Curriculum, attitude is divided into two namely spiritual and social attitudes. It is supported by Kunandar (2013: 100), the assessment of attitude competence is the assessment which done by the teacher to measure students' attainment of attitude competence which consist of several aspects such as receiving or attending, responding, valuing, organization, and characterization.

Second, actually the teachers have *written or oral test and task assignment* such as homework, individual or group project are used to assess the students' knowledge. In this case, the teachers tend to use mid - term test, final exam, and homework to see the students' ability to cover the knowledge competence. Knowledge competence comes out core competence or called (KI 3) in 2013 Curriculum. As explained by Kunandar (2013: 159), the assessment of knowledge competence is the assessment which done by the teachers in order

to measure students' achievement in several aspects namely knowledge, comprehension, application, analysis, synthesis, and evaluation.

Third, the teachers usually assess the students' skill through *performance test, project and portfolio*. From the performance test, the teachers assess the students' practice in front of the class while communicating step. Next, from the project, the teachers have criteria of assessment such like planning, implementation, and report. For instance, how the students prepare the clipping, implement it by searching in magazine or newspaper, and report it to the teacher. For portfolio assessment, the teachers collect the students' task or project from the beginning until the end of semester. The assessment of skill competence is done by the teachers to measure students' achievement which consist of several aspects such as imitation, manipulation, precision, articulation and naturalization. In conclusion, in 2013 Curriculum, the teachers actually have used several of authentic assessment. the percentage of using authentic assessment was 62%. It has fulfilled enough the requirement of using assessment as a demand in the 2013 Curriculum.

Problems Faced in Teaching and Learning Process Using Scientific Approach are in observing, the teacher showed the picture, video and real object to the students. Then the teacher asks the students observe the object intensively. In line with the Syllabus of 2013 Curriculum, the teacher can do several observing activities. The teachers ask the students to observe pictures, video or power point. In this activity, the teacher faced the problem such like the students lack of vocabulary and students have low interest to be a part of teaching and learning process.

In questioning, in this step, the teacher faced the problem such like so difficult invite the students to make a question because of the students were anxiety to speak out in front of the audience. So, the teacher tried to lead the students to make anything question concerned with the topic learned. It is clearly stated in Hosnan (2014: 50), questioning is a learning method which is done by giving some questions to make the students understand about the lesson in order to reach the learning purpose.

In experimenting, the teachers applied the experimenting also by spreading out the text related to the topic. The teacher found the text from the internet, book, magazine and other media. Sometime, the teachers faced the problem such as the students didn't understand the text given. Hence, the teachers wrote down on the board the key word of the text. In Hosnan (2014: 58) states experimenting is as a method which is based on scientific method to

solve problems in detail in order to make student get further information about the material given by the teacher.

In associating, the teachers asked the students to find another text from other sources which was relevant with the text discussed in the previous meeting and brought it into the classroom for the next meeting. The teachers faced the problem such like the teacher was hard to find the text which is appropriate with the students' competence. In Kemdikbud No. 81a year 2013 notes associating as learning activities to process the information collected from the observation's result. In the context of learning, "associating" is focused on students" learning activities.

The last step was communicating; this step was how the teacher asked the students to perform their work in front the class. The problem faced by the teachers such as they had no enough time to give a mark for all students at same time. So that the teacher tried to divide the time by give a little chance for other students to comment what their friend performed in front of the classroom. It is similar with Kemdikbud No. 81a year 2013, communicating is activities to convey the result and conclusion of observation which based on analysis in the form of written, spoken or others.

Based on the explanation above it can could be concluded that the teachers have conducted five steps of scientific approach even though they couldn't apply the steps in every meeting, but generally they had applied this approach well enough. The teacher applied this step based their own way in which it still concerned with the standard of scientific approach in 2013 Curriculum.

Conclusion

The findings showed that teachers were not able to implement the observing and questioning step optimally yet. It was proved that percentage of activities done by the teacher in *observing was 58%* and in *questioning was 60%*. In experimenting and associating, the teachers have applied the activities in good enough. However, in associating and communicating, the teachers have applied the activities optimally.

The finding showed that *experimenting* with the second high percentage of activities conducted by the teacher *in experimenting was 65%*. Meanwhile, percentage of activities applied by the teacher in *associating was 69%.* The last not the least, *communicating* got the highest percentage in implementation of scientific approach that was *93%*. In conclusion, percentage of activities

conducted by the teachers in teaching and learning process based on scientific approach was *69%.* Whereas the findings showed that the teacher needed to improve their ability in implementing observing and questioning step because it has the low percentage.

In 2013 Curriculum, the teachers use authentic assessment as suggested by Kemdikbud (2013). Findings showed that the all assessments have implemented by the teachers *performance test* was being the highest tendency of the teacher used in the classroom with the percentage *92%* of activities. Then followed by *observation and oral test* with the percentage *75 %* of activities. In the third high tendency, the *written test and task assignment* the percentage *67%* of activities. The fourth high tendency, *portfolio assessment* with the percentage *58%* of activities. The fifth high tendency, *peer evaluation and project assessments,* the percentage *50%* of activities. The last, with the percentage *42%* of activities in which the teacher used *self – assessmen* and *Journal assessment* to evaluate the teacher by the students. In short, percentage of activities conducted by the teachers in using assessment based on scientific approach was *62%.*

The problems faced by the teachers in teaching and learning process were the students should pay attention to the five steps used in scientific approach especially on the observing and questioning step. The finding showed that the teachers still was not able to apply these two steps in the classroom yet. Based on the interview we could conclude that by using 2013 Curriculum, the teachers conducted five steps of scientific approach well. Even though they couldn't apply the steps in every meeting, but generally they had applied this approach was good enough. The teacher applied this step based their own way in which it still concerned with the standard of 2013 Curriculum.

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